storage yard connected with the main railway by a switch line. There are sheds and buildings for natural and artificial seasoning of timber, a saw-mill, a carpenter's shop, and eight laboratories, devised for technical research in timber-testing, the physical properties of wood, pathology, wood-preservation, wood-distillation, paper and pulp manufacture, and engineering and chemistry problems connected with timber. The research work undertaken is all carefully planned with the express object of obtaining results which will directly benefit the timber merchant and consumer. The field covered in the general scheme laid down for research accordingly includes every important industry which derives its raw material from the forest.

The Forest Products Branch in the United States furnishes a model which might readily be adapted to our needs. The interests, however, of the timber trade, of the home consumer, and of British owners of woodlands must all be carefully considered, if a satisfactory general scheme is to be evolved. The Bureau of Information and Statistics would necessarily be in London. The laboratories and workshops could perhaps be established in connection with the university which took the greatest interest in the project.

NOTES.

LORD DEVONPORT, the Food Controller, has issued a statement pointing out the urgent need for economy in food, and the necessity for some curtailment of the nation's food consumption. The three most important staples of daily consumption are bread, meat, and sugar, and forethought for the sustenance of the population requires a decision as to whether compulsion is necessary to ensure an equitable distribution and conservation of available supplies. Compulsory rationing to a fixed quantity per head involves a very elaborate machinery, which in itself absorbs labour, and for that reason alone ought to be avoided unless absolutely necessary. Therefore, having carefully weighed the advantages and disadvantages, the Food Controller has come to the conclusion that a voluntary system is preferable until further experience is gained, and meanwhile to trust to the nation's instinct of self-discipline. The following allowance is based on the average weekly consumption of each of the commodities named which should be permitted to each person. After consideration of available stocks and probable means of future supplies, the situation requires that heads of families should endeavour to limit themselves to the weekly purchase for each person comprising the household of the following quantities per head per week:—Bread, 4 lb. (or its equivalent in flour, 3 lb. for bread-making); meat, 2½ lb.; sugar, ¾ lb. Although these quantities will form the basis of the dietary scale, they will naturally be supplemented by other food products. The nation is placed upon its honour to observe these conditions. The effect upon consumption will reveal itself through the statistical returns available to the Food Controller. Meanwhile, to meet the contingency that rationing may become necessary, the machinery to bring such a system into operation is being organised, so that if and when required it may be ready. It is hoped that a patriotic endeavour will be made by everyone to limit consumption wherever possible to below the standard indicated, and by so doing render rationing unnecessary.

THE report of a committee of the Royal Society, made at the request of the President of the Board of Trade, on the food supply of the United Kingdom has just been issued. It is divided into three parts, the first dealing with food supply in the period 1909–13, the second with food supply in 1916, and the third with possible methods of economising the available food supply. The recommendations respecting economies are as follow:—(1) The possibility of a better recovery of flour in milling; (2) the possibility of more economical meat production; (3) the possible increase in the national food supply which might result from a general practice of making cheese in place of butter; (4) a consideration of the economy of food which might be effected by the prohibition of brewing.

THE formation of the new Air Board is authorised by an Order in Council published in the *London Gazette* of Tuesday last. The composition of the board is as follows:—President, Viscount Cowdray; Parliamentary Secretary, Major J. L. Baird; Fifth Sea Lord of the Admiralty, Commodore G. Paine; Director-General of Military Aeronautics, Lieut.-General Sir David Henderson; Controller of Aeronautical Supplies, William Weir; Controller of Petrol Engines, Percy Martin; secretary, Sir Paul Harvey; assistant secretary, H. W. W. McAnally; private secretary to the Parliamentary Secretary, C. G. Evans.

AT the scientific meeting of the Royal Dublin Society on January 23, Lord Rathdonnell, president, in the chair, the Boyle medal of the society was presented to Prof. H. H. Dixon in recognition of his distinguished work for botanical science, and particularly his investigations on transpiration and the ascent of sap in plants.

PROF. R. SAUNDBY has been appointed to deliver the Harveian Oration to the Royal College of Physicians of London for the present year. Dr. E. S. Reynolds is to be the Bradshaw Lecturer. Dr. T. M. Legge will be the Milroy Lecturer in 1918.

WE regret to notice the death, on Sunday last, February 4, at the age of seventy-three years, of Mr. C. Owen Waterhouse, formerly assistant keeper of the British Museum (Natural History).

BY the death of Mr. John Tebbutt, of Windsor, N.S.W., briefly announced in our issue of last week, disappears, at the ripe age of eighty-four, one of the few remaining links that connect the astronomy of to-day with the older form that Airy and his school recognised and practised. The late Mr. Tebbutt, as a loyal member of that school, worked hard to record positions, to deduce orbits, and to study planetary markings. Inadequate instruments did not rob him of the delight of industrious occupation in his selected science, but he did a far greater work than discover comets and painfully determine their position by imperfect means. In a nascent colony in which the conditions of life were adverse to scientific study, and where the stimulus of sympathetic companionship was utterly wanting, he worthily upheld the claims of intellectual study, and struggled manfully in the pursuit of research. He was of the highest type of amateur, one who followed his own inclinations with ardour and enjoyment, never tiring and never changing; he had his reward in well-doing. He observed Donati's comet, nearly fifty years ago, and among his latest observations those of comets still found a place. He was the discoverer of the great comet of 1861, following it with a sextant, and though such an instrument was utterly inadequate for the purpose, as the writer of this note can unfortunately testify, for it fell to him to reduce the observations, yet the Observatory at Melbourne was little better off, for the assistant, Mr. White, had no other means. Mr. Tebbutt's example has, no doubt, done much to stimulate progress in the colony, and that his silent, steady work impressed his fellows is shown by the fact that later he was offered the post of Government astronomer. This appointment was refused, and no doubt wisely, for by that time he had improved his equipment, acquiring first a 4½-in. Cooke, and afterwards an 8-in. refractor by Grubb, and could push his researches in the direction that best pleased himself.

THE *Revue Philosophique* for January announces the death, on December 9, of Prof. T. A. Ribot, the well-known psychologist and philosopher. Prof. Ribot was born at Guingamp in 1839, and during his long life did much, both by lecturing and writing, to further the study of psychology. In 1888 he was appointed professor of experimental psychology at the College of France. He made contributions to many psychological problems, but probably his monographs on some mental diseases, namely, "Les Maladies de la mémoire, de la volonté and de la personnalité," have had the widest circulation of all his works. In his "Essai sur les passions" and in "Problèmes de psychologie affective" he directed attention to the importance of the emotions in the life of the individual, and thus helped to modify the exaggerated belief of many writers in the dominance of the intellectual processes. His interest in English thought is shown by his work, "La Psychologie anglaise contemporaine," and by his translation of Herbert Spencer's "Principles of Psychology." He also edited the *Revue Philosophique* from the beginning of that journal.

Engineering for February 2 records the death of Mr. George Andrew Hobson, which occurred on January 25 in his sixty-third year. Mr. Hobson was for many years a partner with Sir Douglas Fox and Sir Francis Fox, and played an important part in the extensive work which the firm carried out, especially in South Africa. Perhaps the best example of his work is the bridge spanning the Zambezi River near the Victoria Falls. The southern part of the constructional work involved in the completion of the Great Central Railway was carried out by his firm, and in this, as well as in connection with the tube railways of London, Mr. Hobson took an active share. He was a member of the Institution of Civil Engineers, and was awarded a gold medal for each of the two papers he contributed to the Transactions. It is of interest to note that his chief enjoyment was found in the depths of the country, alone with Nature, studying bird-life. His widow and daughter have the deep sympathy of a large circle of professional and social friends.

THE death is announced, in his fifty-first year, of Mr. Henry Gordon Stott, a former president of the American Institute of Electrical Engineers. Mr. Stott was a native of the Orkneys, and was educated at the Watson Collegiate School, Edinburgh, and the College of Arts and Sciences, Glasgow. After doing various professional work in England and Spain, he went to America in 1891 to do construction work for the Buffalo Light and Power Co. Since 1901 he had been superintendent of the motive power of the New York street railways. He was the author of many important papers on electrical engineering.

THE new institute at Potsdam for research in genetics, connected with the Landwirthschaftliche Hochschule of Berlin, was opened in April, 1916. Prof. Erwin Baur is in residence as director, combining this duty with medical work under the German Admiralty.

CAPT. AMUNDSEN, the Norwegian explorer, who proposes to endeavour to reach the North Pole by aeroplane, is on his way to Norway from America to complete his plans. The ship in which he will make the first part of the journey is to be launched at Christiania next March, and Capt. Amundsen expects to start his scientific expedition about the summer of next year. He hopes eventually to come into touch with Robert A. Bartlett, another explorer, who is going *via* Bering Strait.

AT the annual meeting of the Royal Microscopical Society, held on January 17, the following officers were elected for the year 1917:—*President,* E. Heron-Allen; *Vice-Presidents:* J. E. Barnard, A. Earland, R. G. Hebb, F. Shillington Scales; *Treasurer,* C. F. Hill; *Secretaries:* J. W. H. Eyre, D. J. Scourfield; *Ordinary Members of Council:* H. F. Angus, A. N. Disney, F. Martin Duncan, T. H. Hiscott, J. Milton Offord, R. Paulson, P. E. Radley, A. W. Sheppard, E. J. Sheppard, C. Singer, C. D. Soar, J. Wilson; *Librarian,* P. E. Radley; *Curator of Instruments,* C. Singer; *Curator of Slides,* E. J. Sheppard; *Editor of Journal,* R. G. Hebb.

IN connection with the Faraday Society there will be a general discussion on "The Training and Work of the Chemical Engineer" on Tuesday, March 6, at 8 p.m., in the rooms of the Chemical Society, Burlington House, W. Sir R. Hadfield, president of the society, will preside over the discussion, which will be opened by Sir G. Beilby. The following papers will be read:—"The Training of the Chemical Student for Work in the Factory," by Prof. F. G. Donnan; "The Training of the Works Chemist in Physics," by C. R. Darling; and "A Plea for the Forgotten Factor in Chemical Training," by W. R. Cooper.

A SPELL of cold weather has occurred over England during the last five weeks, and its principal characteristic has been its persistence. The cold has rarely been severe, and the absence of warmth during the daytime has been much more marked than the degree of cold at night. No temperature so high as 50° has occurred in London since January 3, and between January 13 and February 5 the thermometer did not rise to 40°, whilst after January 19 it had only exceeded 35° on three days. The maximum, or day, temperature has not once risen to the average since January 5. January started with very warm weather, the mean in London for the first three days being 50·5°, which is in precise agreement with the record high temperatures for the corresponding three days of 1916 and 12° above the normal. The mean temperature of the recording station of the Meteorological Office at South Kensington for January was 36·5°, which is 1·9° below the mean at Greenwich during the last sixty years, taken for comparison, as the Kensington records are for too short a period. The mean maximum, or day, temperature was 39·1°, which is 3·8° below the Greenwich average, whilst the mean minimum, or night, temperature was 34°, the same as the average. There has been no mean maximum for January so low since 1897, when it was 38·7° at Greenwich, and in 1895 it was 37·7°: in both these years the mean night temperature for January was below the freezing-point, being 29·5° in 1895, which is 4·5° lower than the present year, although the mean day temperature in 1895 was only 1·4° lower. January is normally the coldest winter month, but in 1916 it was the warmest winter month and February the coldest. January this winter had the mean day temperature 4° lower than December, but the night temperatures were the same. Snow has fallen with considerable frequency, and in places the fall has been somewhat heavy. The ice has already afforded the pastime of skating, but it has not as yet become general, as in the more severe winters of 1890–91 and 1894–95.

The council of the Association of Chambers of Commerce is, we learn from the *Times*, considering draft Bills designed to carry out reforms in our systems of weights and measures and of coinage, and should the council approve of them they will be submitted to the Chambers of Commerce throughout the country. If there proves to be general agreement the association's Bills will be introduced into Parliament. It is probable that a Bill for establishing a decimal coinage will have first attention, the Bill for introducing metric weights and measures not being pressed until the country has grown accustomed to a decimal coinage. It is suggested that the simplest means of making the change would be the adoption of the present florin, which is the tenth part of a sovereign, as the unit. The existing farthing would be replaced by a "cent," equal to the hundredth part of a florin, instead of a ninety-sixth part as now. In this connection it is worthy of note that Sir Edward Holden, at the meeting on January 26 of the London City and Midland Bank, of which he is chairman, expressed himself strongly in favour of the adoption by this country of the metric system. One of the hindrances to the extension of our foreign trade, he said, is the fact that we do not present our catalogues in foreign countries so advantageously as do other countries. If we are seeking to extend our trade to those countries where German influence has hitherto predominated we must at once begin to adopt the systems which are most easily comprehended by purchasers. The metric and decimal systems have been adopted by all European countries except Russia, and in that country they were, before the war, fast coming to the front. These systems are also used in South America and Japan. In fact, there are few countries which do not use them at the present time.

Owing to the special importance at the present time of establishing commercial connections on a firm basis between the Allied countries, the Russo-British Chamber of Commerce at Petrograd requests all British firms wishing to trade with Russia now or after the war to send their catalogues and price-lists (not fewer than ten copies) to the chamber, 4 Gorochovaia, Petrograd, Russia. The catalogues will be placed in the special library of the chamber, and will be distributed to Russian merchants interested in the development of their trade connections with England.

A cave known as the Tecchia d'Equi, in the district known as Lusigiana and situated between Spezia and Carrara, has long been explored for the prehistoric remains which it contained. Of these, an account is given by Dr. Carlo de Stefani in the *Atti dei Lincei*, xxv. (2), 3. Excavations were first made in this cave in 1909 by Mr. Podenzana, curator of the Spezia civic museum, and they have now been continued by the author with the aid of a small grant from the Italian Association for the Advancement of Science. Human remains have been found, but only in a very incomplete state, and these have been referred to about thirty subjects, mostly women and children. On the other hand, the grotto and Tecchia were principally inhabited by *Ursus spelaeus*, and, moreover, the fauna was essentially alpine in character. The Tecchia was a real "abri sous roche" in the Triassic limestones at the foot of a wild region of the Apuan Alps and at an altitude of 352 metres. In it was an opening leading into a spacious cave in which the remains in question have been found. Even in historic times the Tecchia has served as a human habitation.

Neolithic implements have often been found in places remote from the source of origin of the rocks of which they are formed, and it appears definitely agreed that the giadeitic and nephritic minerals used in those implements found in many regions of Italy are of Alpine origin. In a note in the *Rendiconti del R. Istituto Lombardo* (xlix., 15) Rosa Bariola publishes interesting photomicrographs of rock sections made from implements found near Cagliari, in Sardinia. Three specimens were observed, one of giadeitite from Sant' Apparassi, near Cagliari, one a fragment of an axe from Lesbo, consisting of nephritite, and the third of a form of chlorite from Settimo, all these localities being a little to the east of Cagliari. There is good reason for thinking that no rocks of the same character occur in Sardinia, and it is uncertain whether such are found in Corsica.

All facts in regard to the life-history of that most remarkable bird, the Hoatzin (*Opisthocomus cristatus*), are most welcome. Hence we are glad to know that Father C. B. Dawson is making a careful study of this bird in its native haunts. The results so far obtained he gives us in his "Hand-list of the Birds of British Guiana," which has just reached us. Herein he remarks that the mother feeds the young as young pigeons are fed. That is to say, the method is the same, the young abstracting their food by thrusting the head down the mother's throat. But he makes no mention of the nature of the food thus obtained. This he will probably tell us later, as he remarks in this account that the food-plants of the adult are now being investigated. It would also seem that this bird is polygamous. Still further notes on the same theme, and covering different aspects of the life-history, are furnished by Mr. G. K. Cherrie in his "Contribution to the Ornithology of the Orinoco Region," published in the *Science Bulletin*, vol. ii., No. 6, of the Museum of the Brooklyn Institute of the Arts and Sciences. From this source we gather that the young Hoatzin is almost naked at birth and of a shiny jet-black colour, tinged with olive. Within a day or two the eyes are opened, and from that time forward it can only be approached with the most extreme caution, as it drops from the nest into the water on the slightest alarm. He also gives some valuable facts in regard to its nest-building and the extended period over which the breeding is carried.

A new species of digging-wasp, captured in the Forest of Dean so far back as 1897, is described by Mr. R. C. Perkins in the *Entomologists' Monthly Magazine* for January. Though long puzzled by his capture, Mr. Perkins only recently set himself seriously to the task of its identification. On bringing it to the British Museum he found that Mr. K. G. Blair had also taken this insect in 1912 at Stanmore, Middlesex. His examples, a male and female, were bred from cocoons taken from a dead thistle-stem in the previous year, but though he preserved his specimens he did not attempt to identify them. The description of the insect is given now by Mr. Perkins, who names it *Pompilus cardui*.

In his presidential address before Section C of the South African Association for the Advancement of Science Mr. I. B. Pole Evans, chief of the division of botany in the Department of Agriculture, Pretoria, gave an interesting sketch of the rise, growth, and development of mycology in South Africa. The earlier part of the address is occupied with an account of the contributions of various botanists and travellers from Persoon, "the father of the science of mycology," who collected in 1755, to the present day. A portion of the address is devoted to a brief survey of the cereal rust fungi, a subject to which Mr. Pole Evans has contributed much valuable work in the Transvaal. Wheat, oats, rye, and barley are all attacked by the black rust, *Puccinia graminis*, Pers., and the first three cereals are also each attacked by a second rust fungus. Maize is also subject to two rusts, *P. maydis*, Bereng., and *P. sorghi*, Schw. It will be remembered that Mr. Pole Evans discovered that *Oxalis corniculata* is the alternative host of *P. maydis* in South Africa. For the other Puccinias no alternative host is yet known, and there are no barberry bushes in the country. *P. graminis* therefore exists without its æcidial host, and as the over-wintering of the uredo, or spring spores, does not appear to be entirely responsible for the sudden outbreaks of disease, the history of the telentospores in South Africa is an important problem deserving of careful research.

THE *Archivos do Jardim botanico do Rio de Janeiro*, vol. i., fac. i., which has recently reached us, contains an account of new or little-known Amazonian plants by A. Ducke, illustrated by nineteen plates. The volume also contains a well-illustrated account of the remarkable genus of Cactaceæ, Rhipsalis, by A. Löfgren. Among the new plants figured by Ducke are two new species of the Cycadean genus Zamia; one, *Z. Lecointei*, was found near Obidos, and is the first Cycad to be found in the province of Para. Another, from the south-east of Colombia, may be the same species as that found by Spruce many years ago in Uaupes. Ducke concludes his paper with descriptions and notes of species of the Solonaceous genera Ectozoma and Marckea, the habitats of which are the nests of ants, either of the genus Azteca or Camponotus.

A CAREFUL account of the different trees which have passed under the name of Brazil wood, and afford the valuable red dye, is given in Kew Bulletin No. 9. The Brazil wood of the fourteenth and fifteenth centuries came from the East, and was no doubt derived from *Caesalpinia sappan*. It has recently been replaced largely by the West African camwood, *Baphia nitida*. Some eight trees have at different times been known under the names Brazil or Braziletto, and in addition to those mentioned, namely, *C. echinata* from Brazil, *C. brasiliensis, C. bahamensis*, and *C. bicolor* from Peru and Colombia. Then there are *Peltophorum brasiliense* from Jamaica and Cuba, a very useful timber tree, and *Haematoxylon Brasiletto*, which is a native of Colombia, Venezuela, and Central America, and may prove to be a valuable article of commerce in Colombia. Finally, there is the well-known logwood, *Haematoxylon campechianum*, a native of Yucatan and British Honduras, which has been largely planted in the West Indian islands and elsewhere. A long account of the early traffic in this wood is given, and the article is illustrated with figures of the pods of all these valuable leguminous trees.

IN *American Forestry* for December a warning note is uttered as to the grave danger which threatens the extremely valuable white and five-leaved pines of New England and Canada from the spread of the "pine blister disease," which is making alarming headway, being spread by infected currant and gooseberry bushes, both wild and cultivated. In south-western Maine 85 per cent. of the trees are infected, and of these 50 per cent. are either dead or doomed. Profiting by the devastation caused by the chestnut blight, which was neglected on its first appearance, legislation of a drastic character is being framed to cope with the menace. In the same issue the Hon. David Houston justifies the decision of Congress to take and keep control of all forest land for the regulation of timber production and watershed protection, and to this end large areas of forested land are now being purchased by the Government.

DR. F. DU CANE GODMAN has presented to the British Museum (Nat. Hist.) some fragments of a second skull of *Eoanthropus dawsoni*, which were found by the late Mr. Charles Dawson in 1915 in the Piltdown gravel of a new locality. The specimens will be described by Dr. Smith Woodward in his fourth paper on Piltdown Man, which is to be read at the next ordinary meeting of the Geological Society on February 28.

DR. CHARLES D. WALCOTT has published a third part of his valuable and exhaustive work on Cambrian Trilobites, chiefly from North America and China (Smithsonian Miscellaneous Collections, vol. lxiv., No. 5). It is illustrated in the usual excellent manner with twenty-three plates, and a glance over the figures enables one to realise the extraordinary diversity of the Trilobites in the very early fauna to which the species represented belong. The genus Corynexochus is of special interest to the geologist in Canada, as affording a means of correlating the Lower Cambrian rocks in the St. Lawrence-Newfoundland area with those of Mount Whyte, in the Canadian Rocky Mountains.

THE need for extreme caution in generalisations in geography, especially in human geography, may well be insisted on, and forms the subject of a paper by Mr. G. G. Chisholm in the *Scottish Geographical Magazine*, November, 1916 (vol. xxxii., p. 507). Mr. Chisholm's paper is a closely reasoned argument illustrated by generalisations, which he feels merit criticism, quoted from Ratzel or other more modern geographical writers. He draws an important distinction between influences which act independently of man's will, and others which do not. The latter are affected by so many unknowable circumstances that they can never be stated except in approximate terms. The failure to distinguish these two classes of laws has been a most fruitful source of confusion in geography. Secondly, Mr. Chisholm reminds his readers that the value of geographical conditions varies with the circumstances of the time, and, thirdly, that statements in human geography, when the human will is concerned, are all the more likely to approach the universality of an absolute law the more imperious is the urgency that leads to the behaviour on the part of man that is taken for granted in the statement. Lastly, he dwells on the danger of laying too great stress on any one cause affecting human development to the neglect of others.

THE abnormal ice conditions around Spitsbergen in 1915 and 1916 are discussed by M. Adolf Hoel, of the University of Christiania, in an article in *La Géographie*, vol. xxxi., No. 3. The question is not only of interest in relation to the weather experienced in north-western Europe in these years, but of great importance in respect of the growing economic development of Spitsbergen. In the summer of 1915 strong easterly winds caused the ice to drift round South Cape and block the west coast until August. Vessels had some difficulty in entering and leaving Icefjord. Late in August more ice arrived by the same route and caused difficulties in September. This is very unusual. On the other hand, the same easterly winds caused the east coast of Spitsbergen to be more open than it has been any year since 1898. In the middle of August a vessel had no difficulty in traversing Hinlopen Strait from the north, and reached the extreme east of North-East Land. Further east, towards Hope Island and Franz Josef Land, the sea was singularly clear of ice. This shows that a year such as 1915 might hinder economic development in the west, but would most certainly favour it in the east. In the summer of 1916 these abnormal conditions to some extent were repeated, and ice was troublesome on the west coast until early in September. It should, however, be pointed out that, despite this, the coal-mines in Advent Bay exported 30,000 tons of coal in 1916. M. Hoel also directs attention to the advance of the glaciers in North-East Land since 1898.

IN a valuable paper which appears in the January number of the Journal of the Franklin Institute, Mr. Ralph Brown, of Cornell University, summarises the results which have been obtained during recent experiments on the magnetic properties of iron and nickel under rapidly alternating magnetic fields. The belief that, at the frequencies in common use in power transmission, the permeability of iron was much less than in steady fields now appears to be unjustified, the apparent diminution being due to the alternating fields never penetrating beneath a thin superficial layer of the iron. When, as in recent observations, this skin effect is allowed for, the permeability is found to retain its steady field value up to a frequency of a thousand per second. At a frequency of 10^5 it is, however, reduced to 500, at 10^7 to 200, at 10^9 to 50, at 10^{10} to 20, while at the frequency of light it is reduced to unity. The behaviour of nickel is like that of iron, except that its initial permeability is only 100.

MANY readers of NATURE will doubtless be interested to learn that the advertisement which appears in another column of a modern Elizabethan house which is to be let or sold refers to The Camp, Sunningdale, where Sir Joseph Hooker lived for upwards of a quarter of a century.

MESSRS. WITHERBY AND CO. have been appointed European agents for the "Journal of the Natural History Society of Siam."

OUR ASTRONOMICAL COLUMN.

THE LAKE OKECHOBEE METEORITE.—A stony meteorite which has received this title at the U.S. National Museum has been described by G. P. Merrill (Proc. U.S. Nat. Mus., vol. li., p. 525). It is of rather special interest from the unusual circumstances attending its discovery, having been brought up in a fishing-net some three-quarters of a mile from the shore of the lake from which it receives its name. There is no definite record of a fall in this neighbourhood, but the finder recalls a brilliant meteor which passed to the west of Ritta about thirteen years ago, and was accompanied by explosive sounds. The fragments secured weigh about 1100 grams, and appear to have come from a mass originally ten or twelve inches in diameter. Notwithstanding its long immersion, the stone is still firm and shows the characteristic thin lustreless black crust. The chondritic type of the stone is at once evident in thin sections under the microscope.

CLUSTER VARIABLES.—In the course of an investigation of variable stars in the cluster M5, Prof. S. I. Bailey has found eight stars which have light-curves showing peculiarities not hitherto recognised (Harvard Circular, 193). While the mean period of sixty-one variables of the ordinary cluster type in M5 is 0·547 day, that of the eight stars in question is 0·271 day, or about half the more usual period. Prof. Bailey suggests that such a star may be formed of two variables, each being of the ordinary cluster type, and having the usual period of about half a day, with alternating maxima. This hypothesis is supported by peculiarities in the form of the light-curves, which can be resolved into two curves of the usual type. Spectroscopic observations might provide further tests of this supposition. Prof. Bailey is of opinion that the uniformity of period of cluster variables must have some physical cause, which may separate them from other variables of short period. The mean period in ω Centauri is 0·549d.; in M3, 0·541d.; in M5, 0·547d.; and similar results have been found for other clusters. It is still an open question whether these stars are spectroscopic binaries; if an ordinary cluster variable is a binary, a double variable, on the above hypothesis, must be a system of four components.

UNITED STATES NAVAL OBSERVATORY.—The annual report of the superintendent of the U.S. Naval Observatory for the year ending June 30, 1916, is notable for the attention directed to the increasing demands on the observatory in connection with the submarine and aircraft services. New and improved methods and instruments for accurate and rapid navigational and plotting work have been devised, and instruction given to the *personnel* of the services. The policy of encouraging suggestions, and of making the necessary trials, is stated to have produced several new methods and instruments of value.

The regular programme of astronomical observations was continued without intermission throughout the year, and included numerous observations of the satellites of Saturn and Uranus. It is interesting to note that the American ephemeris for 1919, which is in the press, will include tables for computing the rising and setting of the sun and moon. A special publication referring to the total eclipse of the sun of June 8, 1918, visible in the United States, is in course of preparation.

INTERNATIONAL AND NATURAL LAW.[1]

THE idea of issuing photographic reproductions of the text of such works as can be said to have contributed either to the origin or to the growth of international law, together with English versions by competent scholars, and with introductions giving biographical details and pointing out the importance of the text and its place in the development of the science, is a most worthy conception, and the commencement of its execution is a timely reassurance to the fears of those who imagined that the Germans had made an end of international law. The photographed text obviates possible mistakes in reprint. At the same time provision is made for the rectification of original misprints: where earlier authors have been ill-served by their printers a revised text will accompany the photographed text. The full bibliographies will be appreciated, and the portraits of the authors are interesting. The volumes form handsome quartos, and the typography might almost satisfy the exacting requirements of an Aldo Manuzio.

(1) The introduction to Vattel, by Prof. Albert de Lapradelle, sketches the life of the author, examines the character of his work and the grounds of its success, and assesses its value. A sustained discussion of Vattel's position was very desirable, and Prof. de Lapradelle has successfully met the need; the only weakness of his monograph is occasional repetition, a fault of form inevitably arising from his division of

---

[1] "The Classics of International Law." Edited by James Brown Scott, President of the American Institute of International Law. (1) "Le Droit des Gens." By E. Vattel. Text (2 vols.), and Translation by C. G. Fenwick (1 vol.). (2) "De Iure Naturæ et Gentium Dissertationes." By Samuel Rachel, edited by Ludwig von Bar (1 vol.); with Translation by J. Pawley Bate (1 vol.). (Carnegie Institution of Washington, 1916.)